$TITLE$
Vertical Rates Determined With The Global Positioning System

[*M Heflin*], D Jefferson, Y Vigue, F Webb, J Zumberge, D Argus#
(Jet Propulsion Laboratory, California Institute of Technology,#
Pasadena, CA 91109); G Blewitt (University of Newcastle upon Tyne)

Velocities for 41 globally distributed sites have been estimated using#
GPS data which spans more than three years. Horizontal velocities
result mainly from relative plate motion and deformation in the plate#
boundary zones. Vertical rates can be caused by glacial rebound,#
volcanic uplift, subduction, and other geologic processes but are more#
difficult to measure than horizontal rates. Incorrect antenna height#
variations or periods during which snow covers the antenna can lead to
significant systematic effects. Even with perfect. models, vertical#
rates are more difficult to determine than horizontal rates because#
satellites can only be observed overhead. On the other hand, some#
sources of vertical error average out over the time span used for rate#
determination. After the best fit linear trends are subtracted, the#
daily WRMS of vertical residuals over all sites is 14 mm. The most#
promising detection of glacial rebound is at Algonquin Park where the#
GPS vertical rate estimate is5.9+- 2.3 mm/yr, consistent with the#
ICE-3G prediction of 3.9 mm/yr.

$INFO$
1. 1994 Spring Meeting

2. 011954731

3. (a) M B Heflin
MS 238-600
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91109
(b) 818-354-2823
mbh@cobra.jpl .nasa.gov
(c) 818-393-4965

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5. (a) G02 Vertical Positioning: Measurement, Modeling, and Interpretation
(b) 1209 Crustal Movements
(c)

6. o (oral) preferred

7. New material

8. Charge $50 to Visa
exp ##/##/##

9. c

10. No special requests

11. No